

# Installing QST

- Always check you have the latest version by going to <https://sourceforge.net/projects/qstonline/>

QST should only be run under SSL.

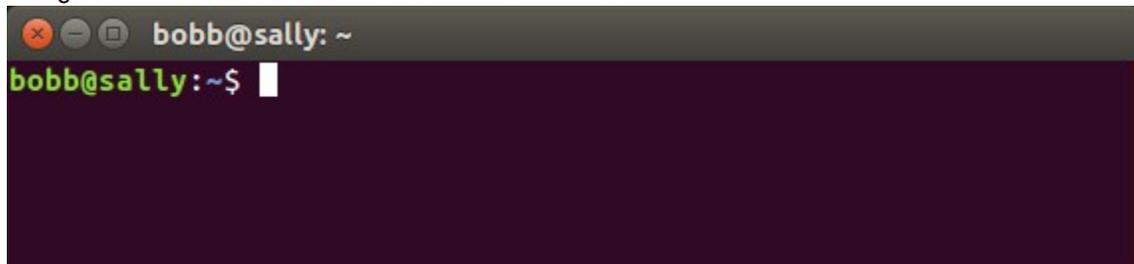
AWS install after Ubuntu/Linux. LDAP after linux.

Mac install at end.

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## UBUNTU/LINUX Install:

Everything should be done in a terminal window.

A screenshot of a terminal window with a dark background. The title bar shows window control buttons and the text 'bobb@sally: ~'. The terminal content shows the prompt 'bobb@sally:~\$' followed by a white cursor block.

The install of MySQL will install their latest stable release 8.x .

When unzipped, the files will be under qst directory.

Installation on Ubuntu 20.x.

- the version of Perl you are running is 5.30.0 (this comes standard with Ubuntu 20.x)

- Other versions of Ubuntu:

- get the version of perl, run:  
perl -v

- if different then 5.30 you will have to change /home/MyApache2/startup.pl to reflect the path to perl with the version number  
eg. /usr/local/lib/x86\_64-linux-gnu/perl/5.30  
change the 5.30 to the version number displayed by running the above

- mod\_perl is version 2.x

- QST writes errors to /var/logs/apache2/error.log

1. run:

```
sudo apt-get install build-essential
```

- install apache 2

```
sudo apt install apache2
```

```
sudo service apache2 start
sudo service apache2 stop
```

```
- install mod_perl
  sudo apt-get -f install
  sudo apt-get -y install libapache2-mod-perl2
```

```
run: a2enmod perl.load
```

```
Enabling conf mod_perl.
```

```
To activate the new configuration, you need to run:
```

```
  sudo service apache2 reload
  or
  sudo systemctl restart apache2
```

```
under /var/www run:
```

```
sudo mkdir qst
```

```
then under /var/www/qst run:
```

```
sudo mkdir schools
sudo chmod 777 schools
```

```
then under /var/www/qst/schools run:
```

```
sudo mkdir qst_files
sudo chmod 777 qst_files
```

```
then under /var/www/qst/schools/qst_files run:
```

```
sudo mkdir photos
sudo chmod 777 photos
```

```
cd to /etc/apache2/sites-available
```

```
sudo vi 000-default.conf
```

```
change Document root to /var/www/qst
```

```
save
```

```
run:
```

```
cd /home
```

```
sudo mkdir MyApache2
```

```
cd 'to directory you unzipped qst into'
```

```
sudo cp QST.pm /home/MyApache2
```

```
sudo cp startup.pl /home/MyApache2
```

```
cd /home/MyApache2
```

```
sudo chmod 711 startup.pl
```

```
sudo chmod 715 QST.pm
```

```
run:
```

```
sudo vi /etc/apache2/apache2.conf
```

Paste the following in above # AccessFileName: The name of the file to look for in each directory :

```
StartServers 10
MaxRequestWorkers 10000
ServerLimit 100
ThreadsPerChild 100
ThreadLimit 100
```

```
PerlModule Apache::DBI
PerlRequire /home/MyApache2/startup.pl
```

```
<Location /qst>
    SetHandler perl-script
    PerlResponseHandler MyApache2::QST
</Location>
```

close apache2.conf

```
run:
sudo vi /etc/apache2/sites-enabled/000-default.conf
```

Paste the following in under the DocumentRoot directive:

```
PerlInterpStart    20
PerlInterpMax      100
PerlInterpMaxSpare 20
```

close 000-default.conf

```
run:
sudo apt-get install perl-doc
sudo perl -MCPAN -e 'install Bundle::DBI'
```

2. install mysql (installs latest version 8.x):

```
run:
sudo apt-get update
sudo apt-get install mysql-server
```

- if it did not ask for a password when installing mysql (version 8.x) run:

```
sudo mysql -u root -p
or
mysql -u root -p
```

Press Enter

```
mysql>ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'your_new_password_here';
```

*then:*

```
mysql>CREATE DATABASE qst;
```

If MySQL 8.x:

```
mysql>CREATE USER 'qstuser'@'localhost' IDENTIFIED BY 'Qstyreg#389';
mysql>grant all on qst.* to qstuser@localhost;
```

```
mysql>CREATE USER 'qst'@'localhost' identified by 'Qst#captain2';
mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO qst@localhost;
```

else if prior version:

```
mysql>grant usage on *.* to qstuser@localhost identified by 'Qstyreg#389';
mysql>grant all privileges on qst.* to qstuser@localhost;
mysql>grant usage on *.* to qst@localhost identified by 'Qst#captain2';
mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO 'qst'@'localhost';
```

then log out of the MySQL shell:

```
mysql>exit;
```

and type the following in the terminal window:

```
mysql -u qstuser -p qst < //path to directory you unzipped qst to//qst_gpl/qst.sql
```

```
go to /etc/mysql/mysql.conf.d  
open mysqld.cnf
```

```
under the [mysqld] section,  
replace:
```

```
#socket = /var/run/mysqld/mysqld.sock
```

```
with:
```

```
socket = /run/mysqld/mysqld.sock
```

Save the file.

3. run:

```
sudo apt-get update  
sudo cpan Email::Valid  
sudo apt-get install libcrypt-pbkdf2-perl  
sudo apt-get install libdbd-mysql-perl  
sudo cpan -i Net::DNS  
sudo cpan -i Net::LDAP  
sudo cpan -i Mail::Address  
sudo cpan -i MIME::Base64  
sudo cpan -i Archive::Zip  
sudo cpan -i Exporter  
sudo perl -MCPAN -e 'install Apache::DBI'
```

Copy the contents of //path to directory you unzipped qst to//qst directory to  
/var/www/qst/

Copy the contents of //path to directory you unzipped qst to//qst/schools directory  
to /var/www/qst/schools

Restart Apache:

```
sudo service apache2 stop  
sudo service apache2 start
```

Go to localhost in your web browser and enter the info. below:

```
username: admin  
pass: qstcaptain
```

!!!!!! Change the password!

Click on Server -> Administration -> Head Administrator and select Password. Change  
the password and Save it.

```
-----  
-----
```

To Use LDAP:

```
open QST.pm
```

```
uncomment line 2541 & 2625 $compare_password =  
&authenticate_ldap("username", "$INPUT{user}", "password", "$INPUT{pass}");
```

comment out line 2542 & 2626 \$compare\_password =  
&compare\_password("password", "\$INPUT{pass}", "hash", "\$row[2]");  
If windows uncomment Net::LDAP at line 34.  
On linux uncomment line 15 use Net::LDAP.  
Make appropriate changes to sub authenticate\_ldap section beginning at line 3115

Create an admin user in LDAP with the same password as in QST.  
Create your users in LDAP with passwords and in QST as 0 for their password.  
Stop then start apache.

-----  
To use SSL:

Run the command:  
dpkg -S mod\_ssl.so

Chances are that it will display something like:

```
apache2.2-common: /usr/lib/apache2/modules/mod_ssl.so
```

It means that mod\_ssl is already installed on your system, as it does not come in a separate package, but it is bundled in apache2.2-common.

Run:  
a2enmod ssl  
sudo service apache2 reload

go to <https://letsencrypt.org/> to get a certificate:  
Use Certbot ACME client.

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\*\*\*\*\*  
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## AWS Install

Choose Ubuntu 24.x as OS.  
\*\* Will need at least a t2.small to get it installed.  
- only install OS  
- Do NOT have Apache or MySQL installed (you will install it).  
- Follow the Ubuntu/Linux instructions above.

\*\*\*\*\*  
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## Mac Install

- This was done on a Mac mini M1 running Mac OS 13.0 Ventura.
- We used Homebrew and Perlbrew so it should work for other versions of Mac. Let us know [qstsupport@shaw.ca](mailto:qstsupport@shaw.ca) if more documentation is required for other versions.
- A user recently (Dec. 18, 2024) did an install on a macos sonoma 14.4, Apple M3 Max (apple silicon).
- `brew install` will not install MySQL 5.7 any longer, it now installs version 8.0 instead of the 5.7 we recommend for very large scale use.

In your terminal.

Run the following command first to install macOS Command Line Tools

- if your Mac already has CLT installed you can skip this part  
xcode-select --install

Turn off the apache already there, run:  
sudo apachectl stop

Install Homebrew for:

Ventura, Monterey, Sonoma run:  
/bin/bash -c "\$(curl -fsSL  
<https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh>)"

MacOS Catalina, macOS Mojave, and MacOS Big Sur run:  
/bin/bash -c "\$(curl -fsSL  
<https://raw.githubusercontent.com/Homebrew/install/master/install.sh>)"

MacOS High Sierra, Sierra, El Capitan, and earlier run:  
/usr/bin/ruby -e "\$(curl -fsSL  
<https://raw.githubusercontent.com/Homebrew/install/master/install>)"

It will tell you to run two commands to add Homebrew to your PATH, run them.  
To permanently set PATH on Mac, all you have to do is open either bash files  
(.bashrc or .bash\_profile)  
or zsh files (.zshrc or .zsh\_profile) under /User/your user name/.zshrc  
or .zsh\_profile and add the  
following to it:

```
export PATH=/opt/homebrew:$PATH
```

Close file.

Run:

```
brew analytics off
```

Intall Perl Brew run:

```
\curl -L https://install.perlbrew.pl | bash
```

To install a perl release with threads, and use it as default in the current  
shell and in all future shell sessions (takes a bit of time).

If Sonoma, run:

```
perlbrew install perl-5.32.1 --thread  
perlbrew switch perl-5.32.1
```

else run:

```
perlbrew install perl-5.30.0 --thread  
perlbrew switch perl-5.30.0
```

Install apache 2.4.xx from homebrew, run:

```
brew install httpd
```

```
-----  
DocumentRoot is /opt/homebrew/var/www/qst  
Log files are in /opt/homebrew/var/log/httpd/  
Configuration /opt/homebrew/etc/httpd/httpd.conf  
-----
```

Then install libapreq2-2.17 library.

Go to the directory you unzipped qst into, you will see libapreq2-2.17.tar.gz

there.

```
Run:
tar xvfz libapreq2-2.17.tar.gz
cd libapreq2-2.17
./configure
make
make install
```

```
Run:
brew services stop httpd
brew services start httpd
```

```
Install svn, run:
brew options subversion
brew install subversion
```

```
Install mod_perl 2, run:
svn checkout https://svn.apache.org/repos/asf/perl/modperl/trunk/ mod_perl-2.0
cd mod_perl-2.0
perl Makefile.PL MP_CCOPTS=-std=gnu89
make
make install
```

```
Copy mod_perl.so in
/opt/homebrew/Cellar/httpd/2.4.54_1/lib/httpd/modules/mod_perl.so
to /opt/homebrew/lib/httpd/modules
```

```
Copy our mac_httpd.conf (in directory you unzipped qst into) to
/opt/homebrew/etc/httpd/httpd.conf and run:
brew services stop httpd
brew services start httpd
```

```
Copy all the files:
cd 'to directory you unzipped qst into'
run:
cp -r qst /opt/homebrew/var/www
cp -r schools /opt/homebrew/var/www/qst
```

Make directory Apache2 under /opt/homebrew/lib/httpd/modules

```
cd 'to directory you unzipped qst into'
```

```
Run:
cp mac_QST.pm /opt/homebrew/lib/httpd/modules/Apache2/QST.pm
cp mac_startup.pl /opt/homebrew/lib/httpd/modules/startup.pl

cd /opt/homebrew/lib/httpd/modules
chmod 711 startup.pl

cd /opt/homebrew/lib/httpd/modules/Apache2
sudo chown your_user QST.pm
sudo chmod 715 QST.pm
```

Make directory photos under /opt/homebrew/var/www

```
Run:
sudo perl -MCPAN -e 'install Bundle::DBI'
brew install mysql@8.0
```

Add the following to /USERS/'your user'/.zshrc file:

```
export PATH=/opt/homebrew/opt/mysql@8.0/bin:$PATH
```

Exit your terminal, open another terminal (so it sets the path above for you).

Run:

```
brew services start mysql@8.0
```

```
sudo mysql -uroot
```

```
mysql>ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'your_new_password_here';
mysql>CREATE DATABASE qst;
mysql>grant usage on *.* to qstuser@localhost identified by 'Qstyreg#389';
mysql>grant all privileges on qst.* to qstuser@localhost;
mysql>grant usage on *.* to qst@localhost identified by 'Qst#captain2';
mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO 'qst'@'localhost';
mysql>exit;
```

Run:

```
mysql -u qstuser -p qst < //path to directory you unzipped qst
to'/qst_linux/qst.sql
```

Run:

```
brew install openssl mysql-connector-c
```

Open /opt/homebrew/opt/mysql@8.0/bin/mysql\_config and go to the line which begins with

```
$libs="-L$pckglibdir"
```

and below it add:

```
libs="$libs -L/opt/homebrew/opt"
```

Save the file.

Run:

```
PATH="$(brew --prefix mysql-client)/bin:$PATH"
export LIBRARY_PATH=$(brew --prefix openssl)/lib:$LIBRARY_PATH
```

```
sudo cpan -i Email::Valid
sudo cpan -i Crypt::PBKDF2
sudo cpan -i Bundle::libnet
sudo cpan -i DBI
sudo cpan -i DBD::mysql
sudo cpan -i Net::DNS
sudo cpan -i Mail::Address
sudo cpan -i MIME::Base64
sudo cpan -i Archive::Zip
sudo cpan -i Exporter
sudo perl -MCPAN -e 'install Apache::DBI'
```

```
brew services stop httpd
brew services start httpd
```

Go to localhost in your web browser and enter the info. below:

username: admin  
pass: qstcaptain

!!!!!! Change the password!  
Click on Server -> Administration -> Head Administrator and select Password.  
Change the password and Save it.

\*\*\* QST should be run encrypted for true security.